1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name

EHC® Liquid Reagent Mix

Other means of identification

Alternate Commercial Name

EHC®-L Mix; EHC® Liquid - Solid Component

Recommended use of the chemical and restrictions on use.

Recommended Use:

Bioremediation product for the remediation of contaminated soil and groundwater

Restrictions on Use:

Not for drinking water purification treatment.

Manufacturer/Supplier

PeroxyChem LLC
2005 Market Street
Suite 3200
Philadelphia, PA 19103
Phone: +1 267/ 422-2400 (General Information)
E-Mail: sdsinfo@peroxychem.com

Emergency telephone number

For leak, fire, spill or accident emergencies, call:
1 800 / 424 9300 (CHEMTREC - U.S.A.)
1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)
1 303/ 389-1409 (Medical - U.S. - Call Collect)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Combustible dust

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Warning

Hazard Statements

May form combustible dust concentrations in air
Precautionary Statements - Prevention
Keep away from all ignition sources including heat, sparks and flame. Keep container closed and grounded. Prevent dust accumulations to minimize explosion hazard.

Hazards not otherwise classified (HNOC)
No hazards not otherwise classified were identified.

Other Information
CONTAINMENT HAZARD: Any vessel that contains wet EHC must be vented due to potential pressure build up from fermentation gases

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron salt</td>
<td>Proprietary</td>
<td>92-97</td>
</tr>
<tr>
<td>amino acid</td>
<td>Proprietary</td>
<td>3-7</td>
</tr>
</tbody>
</table>

Occupational exposure limits, if available, are listed in section 8

4. FIRST AID MEASURES

Eye Contact
Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids intermittently. Consult a physician.

Skin Contact
Wash off with warm water and soap. Get medical attention if irritation develops and persists.

Inhalation
Remove from exposure, lie down. If symptoms persist, call a physician.

Ingestion
If swallowed, do not induce vomiting - seek medical advice.

Protection of first-aiders
No information available.

Most important symptoms and effects, both acute and delayed
Gastrointestinal effects. Inhalation of dust in high concentration may cause irritation of respiratory system.

Indication of immediate medical attention and special treatment needed, if necessary
Treat symptomatically

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific Hazards Arising from the Chemical
Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Hazardous Combustion Products
Carbon oxides (COx).

Explosion data
Sensitivity to Mechanical Impact
Not sensitive.

Sensitivity to Static Discharge
Not sensitive.
Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
For personal protection see Section 8. Avoid dispersal of dust in the air (i.e., cleaning dust surfaces with compressed air).

Other
Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Use only non-sparking tools.

Environmental Precautions
No special environmental precautions required.

Methods for Containment
Sweep or vacuum up spillage and return to container. Avoid wetting dust and clean up as a dry powder with appropriate PPE for handling dry dusty materials; store in containers that keep material dry, segregated but allow to vent. Avoid dispersal of dust in the air (i.e., cleaning dust surfaces with compressed air.). Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Material may be recycled when contamination is not a problem.

Methods for cleaning up
Following product recovery, flush area with water.

7. HANDLING AND STORAGE

Handling
Avoid contact with skin, eyes and clothing. Do not ingest. Ensure adequate ventilation. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powdered material can build static electricity when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmosphere.

Storage
Keep tightly closed in a dry and cool place. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible products
Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Guidelines
Ingredients with workplace control parameters.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron salt</td>
<td>TWA: 1 mg/m³</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>British Columbia</th>
<th>Quebec</th>
<th>Ontario TWAEV</th>
<th>Alberta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron salt</td>
<td>TWA: 1 mg/m³</td>
<td>TWA: 1.0 mg/m³</td>
<td>TWA: 1 mg/m³</td>
<td>TWA: 1 mg/m³</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering measures
Ensure adequate ventilation, especially in confined areas. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in the handling of this product contain explosion relief vents or an explosion suppression or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

Individual protection measures, such as personal protective equipment
Eye/Face Protection
Safety glasses with side-shields.

Skin and Body Protection
Wear suitable protective clothing.

Hand Protection
Protective gloves

Respiratory Protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Dry powder</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>light gray</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>4.5 (1% solution)</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>100 °C</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>May be combustible at high temperatures</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit:</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Fairly soluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Low level dust explosion hazard</td>
</tr>
<tr>
<td>Kdaf</td>
<td>76 bar-m/sec: St1 Class dust</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No information available</td>
</tr>
<tr>
<td>Bulk density</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

None under normal use conditions

Chemical Stability
Stable under recommended storage conditions. Decomposes on heating.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous polymerization
Hazardous polymerization does not occur.

Conditions to avoid
To avoid thermal decomposition, do not overheat.

Incompatible materials
Strong oxidizing agents.

Hazardous Decomposition Products
Carbon oxides (COx).

11. TOXICOLOGICAL INFORMATION
**Product Information**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 Oral</td>
<td>Iron Salt: 2100 mg/kg (guinea pig)</td>
</tr>
<tr>
<td></td>
<td>Cysteine: 1890 mg/kg (rat)</td>
</tr>
<tr>
<td>LD50 Dermal</td>
<td>No information available</td>
</tr>
<tr>
<td>LC50 Inhalation</td>
<td>No information available</td>
</tr>
</tbody>
</table>

**Sensitization**

Not expected to be sensitizing based on the components.

**Information on toxicological effects**

**Symptoms**

Dust is irritating eyes, nose, throat, and lungs.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Carcinogenicity**

Contains no ingredient listed as a carcinogen.

**Mutagenicity**

This product is not recognized as mutagenic by Research Agencies.

**Reproductive toxicity**

This product does not contain any known or suspected reproductive hazards.

**STOT - single exposure**

No information available.

**STOT - repeated exposure**

No information available.

**Aspiration hazard**

Not applicable.

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### 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Ecotoxicity effects**

Not expected to have significant environmental effects

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

**Mobility**

No information available.

**Other Adverse Effects**

None known.

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### 13. DISPOSAL CONSIDERATIONS

**Waste disposal methods**

It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.

**Contaminated Packaging**

Dispose of in accordance with local regulations.

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### 14. TRANSPORT INFORMATION

**DOT**

NOT REGULATED
15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories
- Acute health hazard: No
- Chronic health hazard: No
- Fire hazard: No
- Sudden release of pressure hazard: No
- Reactive Hazard: No

Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA/EPCRA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA (United States)</th>
<th>DSL (Canada)</th>
<th>EINECS/EL INCS (Europe)</th>
<th>ENCS (Japan)</th>
<th>China (IECSC)</th>
<th>KECL (Korea)</th>
<th>PICCS (Philippines)</th>
<th>AICS (Australia)</th>
<th>NZIoC (New Zealand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron salt</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>(92-97)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amino acid</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>(3-7)</td>
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</tbody>
</table>

CANADA

WHMIS Hazard Class: Non-controlled

16. OTHER INFORMATION

NFPA Health Hazards 1 | Flammability 1 | Stability 0 | Special Hazards -
HMIS Health Hazards 1 | Flammability 1 | Physical hazard 0 | Special precautions -

NFPA/HMIS Ratings Legend
- Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Uniform Fire Code
- COMBUSTIBLE DUST/POWDER

References
- Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

Revision date: 2016-02-03
Revision note: (M)SDS sections updated 9
Issuing Date: 2016-01-26
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Prepared By:

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End of Safety Data Sheet